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R. O. ALLEN

2,282,149

IMPLEMENT RETAINER

Filed March 12, 1940

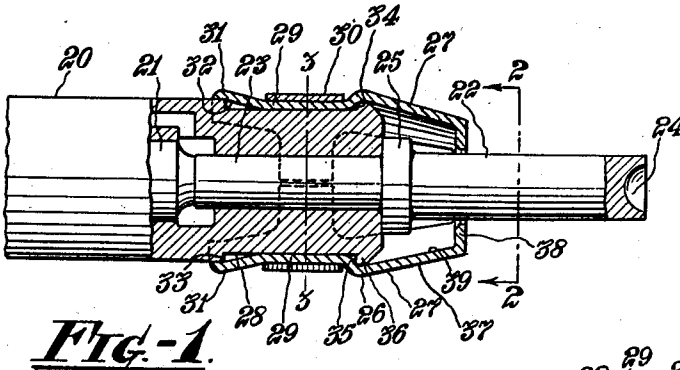


FIG. 1.

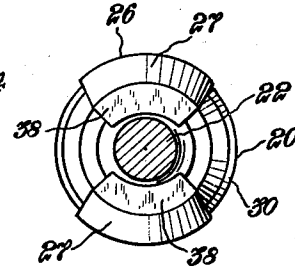


FIG. 2.

FIG. 3.

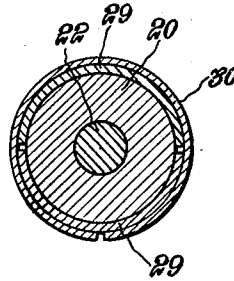
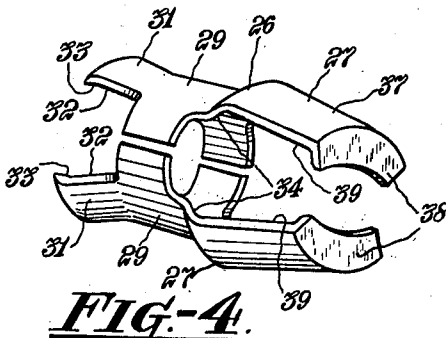


FIG. 4.

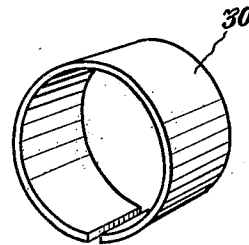


FIG. 5.

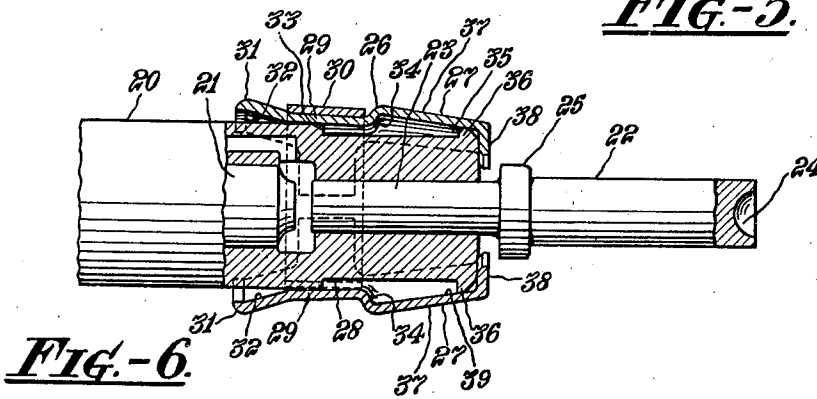


FIG. 6.

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IMPLEMENT RETAINER

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2 Claims. (Cl. 279—19.4)

This invention relates to a retaining device, and more particularly to an implement retainer adapted to be attached to the cylinder of a pneumatic tool for preventing ejection of a working implement from the tool.

One object of the invention is to enable the retainer to be expeditiously shifted to the retaining and nonretaining positions.

Other objects will be in part obvious and in part pointed out hereinafter.

In the drawing accompanying this specification and in which similar reference numerals refer to similar parts,

Figure 1 is a longitudinal view, partly broken away, of a pneumatic tool equipped with a retainer constructed in accordance with the practice of the invention,

Figures 2 and 3 are transverse views taken through Figure 1 on the lines 2—2 and 3—3, respectively,

Figures 4 and 5 are perspective views of details of the retainer, and

Figure 6 is a view similar to Figure 1 showing the retainer in the non-retaining position for releasing the working implement.

Referring more particularly to the drawing, 20 designates the cylinder of a pneumatic tool and 21 a hammer piston reciprocable in the cylinder for actuating a working implement 22, shown as a rivet set, having a stem 23 extending slidably into the front end of the cylinder.

In the front end of the rivet set 22 is a socket 24 to engage and form the end of a rivet and intermediate the ends of the rivet set is a collar 25 adapted to abut the front end of the cylinder 20 to limit the distance which the rivet set may extend into the cylinder.

In accordance with the practice of the invention, the pneumatic tool is provided with a retainer 26 for preventing ejection of the rivet set 22 from the cylinder upon impact of the piston 21 against the rivet set. The retainer comprises, as a preferred form of construction, a pair of symmetrical sections 27 which may be formed from sheet material. The sections seat upon the periphery of the cylinder 20 which has an annular groove 28 to receive depressed portions 29 of the sections, and encircling the depressed portions 29 is a split spring-ring 30 to yieldably press said portions against the bottom of the groove 28.

The portions 29 are of less length than the groove 28 so that they may move longitudinally in the groove, and at the rearward ends of the portions 29 are wings 31 having inner inclined surfaces 32 that seat upon the shoulders 33 forming the rearward bounding surface of the groove 28.

At the front end of each depressed portion 29 are outwardly extending shoulders 34 to en-

gage the rearward surface 35 of a shoulder 36 on the cylinder 20 for retaining the sections 27 on the cylinder, said shoulder 36 constituting the front bounding surface of the groove 28. The portions 37 of the sections 27 lying forwardly of the shoulders 34 are inclined toward the rivet set 22 and carry inturned flanges 38 that lie in front of the collar 25 to act as an abutment therefor. The inner surfaces 39 of the portions

37 are inclined in the same direction and preferably in the same degree as the surface 32 and seat upon the periphery of the shoulder 36.

In practice, whenever it is intended to insert a rivet set into the cylinder 20 pressure is applied manually to the front ends of the sections 27 to move them rearwardly until the flanges 38 seat against the front end of the cylinder 20 for moving the sections bodily outwardly. The shoulder 34 will then lie in the plane of the depressed portions 29 and the shoulder 36 will occupy a position at the front end of the inclined surfaces 39 and the flanges 38 will be spread apart to permit the collar 25 to pass between them.

After the working implement is inserted in the cylinder the retainer is again moved forwardly on the cylinder until the shoulders 34 seat against the shoulder 36. The flanges 38 will then occupy the retaining position in the longitudinal plane of the collar 25 and will prevent the rivet set from moving or being projected out of the cylinder.

I claim:

1. An implement retainer, comprising in combination with a casing and a working implement therein, a retainer sleeve for the working implement slidable on the casing and consisting of a plurality of sections each having an inturned retaining portion, shoulders spaced along the length of the casing, a pair of inclined surfaces on each section to slide over the shoulders for moving the sections bodily outwardly to move the inturned portions out of the retaining position, and a resilient member to oppose the separation of the sections.

2. An implement retainer, comprising in combination with a casing and a working implement therein, a retainer sleeve for the working implement slidable on the casing and consisting of a plurality of sections each having an inturned retaining portion, annular shoulders on the periphery of the casing, a pair of inclined surfaces on each section to slide over the shoulders for moving the sections bodily outwardly to move the inturned portions out of the retaining position, means on the sections to lie between the shoulders for retaining the sections on the casing, and a spring-ring to encircle the sections for opposing separation thereof.

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